

#15

RECEIVED

MAY 09 2003  
TECH CENTER 1600/2000

1600

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/866,570B

DATE: 05/01/2003

TIME: 13:29:48

Input Set : A:\EP.txt

Output Set: N:\CRF4\05012003\I866570B.raw

3 <110> APPLICANT: Washington State University Research Foundation  
 4 Croteau, Rodney B  
 5 Walker, Kevin D  
 6 Schoendorf, Anne  
 7 Wildung, Mark R  
 9 <120> TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING 10-DEACETYLBACCATIN III O  
 ACETYL

10 TRANSFERASE AND RELATED PRODUCTS  
 12 <130> FILE REFERENCE: 4630-59094  
 14 <140> CURRENT APPLICATION NUMBER: US 09/866,570B  
 15 <141> CURRENT FILING DATE: 2001-05-25  
 17 <150> PRIOR APPLICATION NUMBER: US 09/457,046  
 18 <151> PRIOR FILING DATE: 1999-12-07  
 20 <150> PRIOR APPLICATION NUMBER: US 09/411,145  
 21 <151> PRIOR FILING DATE: 1999-09-30  
 23 <160> NUMBER OF SEQ ID NOS: 74  
 25 <170> SOFTWARE: PatentIn version 3.1  
 27 <210> SEQ ID NO: 1  
 28 <211> LENGTH: 920  
 29 <212> TYPE: DNA  
 30 <213> ORGANISM: Taxus cuspidata  
 32 <400> SEQUENCE: 1

33 atgttggctt attatcccccc ttttgcgtgg cgcctcagag agacagaaaaa tggggatctg 60  
 35 gaagtggaaat gcacaggggaa ggggtgcataa tttttggaaag ccatggcaga caatgagctg 120  
 37 tctgtgttgg gagattttga tgacagcaat ccatacatttc agcagctact tttttcgctt 180  
 39 ccaactcgata ccaatttcaa agacactctctt cttctgggtt ttcaggttaac tcgttttaca 240  
 41 tggggaggct ttgttgttgg agtgagtttc caccatgggtg tatgtgatgg tcgaggagcg 300  
 43 gcccaatttc ttaaagggtt ggcagaaaatg gcacggggag aggttaagct ctcattggaa 360  
 45 ccaatatggaa atatggaaact agtgaagctt gatgacccta aataccctca atttttcac 420  
 47 tttgaattcc tacgagcgcc ttcaatttttgg gaaaaatttgc ttcaaaacata ttttattata 480  
 49 gatttggaga ccataaatta tatcaaacaatc tctgttatgg aagaatgtaa agaattttgc 540  
 51 tcttcattcg aagtgtcatac agcaatgact tggatagcaa ggacaagagc ttttcaaatt 600  
 53 ccagaaaatg agtacgtgaa aattctcttc ggaatggaca tgaggaactc attaatccc 660  
 55 cctcttccaa gcggtacta tggtaactcc attggtaccg catgtgcagt ggataatgtt 720  
 57 caagacctct taatggatc tctttgcgt gctataatga ttataaagaa atcaaaggc 780  
 59 tctttaaatg ataatttcaa gtcaagagct gtggtaagc catctgaattt ggtatgtgaat 840  
 61 atgaatcatg aaaacgtatg tgcatttgc tggatggagcc gattgggattt tggatgtgaat 900  
 63 gattttggctt gggggaaaacc 920

66 &lt;210&gt; SEQ ID NO: 2

67 &lt;211&gt; LENGTH: 306

68 &lt;212&gt; TYPE: PRT

69 &lt;213&gt; ORGANISM: Taxus cuspidata

71 &lt;400&gt; SEQUENCE: 2

73 Met Leu Val Tyr Tyr Pro Pro Phe Ala Gly Arg Leu Arg Glu Thr Glu

ENTERED

P.6

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/866,570B

DATE: 05/01/2003  
TIME: 13:29:48

Input Set : A:\EP.txt  
Output Set: N:\CRF4\05012003\I866570B.raw

74	1	5	10	15												
77	Asn	Gly	Asp	Leu	Glu	Val	Glu	Cys	Thr	Gly	Glu	Gly	Ala	Met	Phe	Leu
78				20				25							30	
81	Glu	Ala	Met	Ala	Asp	Asn	Glu	Leu	Ser	Val	Leu	Gly	Asp	Phe	Asp	Asp
82				35				40							45	
85	Ser	Asn	Pro	Ser	Phe	Gln	Gln	Leu	Leu	Phe	Ser	Leu	Pro	Leu	Asp	Thr
86				50				55							60	
89	Asn	Phe	Lys	Asp	Leu	Ser	Leu	Leu	Val	Val	Gln	Val	Thr	Arg	Phe	Thr
90	65				70				75						80	
93	Cys	Gly	Gly	Phe	Val	Val	Gly	Val	Ser	Phe	His	His	Gly	Val	Cys	Asp
94				85				90							95	
97	Gly	Arg	Gly	Ala	Ala	Gln	Phe	Leu	Lys	Gly	Leu	Ala	Glu	Met	Ala	Arg
98				100				105							110	
101	Gly	Glu	Val	Lys	Leu	Ser	Leu	Glu	Pro	Ile	Trp	Asn	Met	Glu	Leu	Val
102				115				120							125	
105	Lys	Leu	Asp	Asp	Pro	Lys	Tyr	Leu	Gln	Phe	Phe	His	Phe	Glu	Phe	Leu
106				130				135							140	
109	Arg	Ala	Pro	Ser	Ile	Val	Glu	Lys	Ile	Val	Gln	Thr	Tyr	Phe	Ile	Ile
110	145				150				155						160	
113	Asp	Leu	Glu	Thr	Ile	Asn	Tyr	Ile	Lys	Gln	Ser	Val	Met	Glu	Glu	Cys
114					165				170						175	
117	Lys	Glu	Phe	Cys	Ser	Ser	Phe	Glu	Val	Ala	Ser	Ala	Met	Thr	Trp	Ile
118				180				185							190	
121	Ala	Arg	Thr	Arg	Ala	Phe	Gln	Ile	Pro	Glu	Ser	Glu	Tyr	Val	Lys	Ile
122				195				200							205	
125	Leu	Phe	Gly	Met	Asp	Met	Arg	Asn	Ser	Phe	Asn	Pro	Pro	Leu	Pro	Ser
126				210				215							220	
129	Gly	Tyr	Tyr	Gly	Asn	Ser	Ile	Gly	Thr	Ala	Cys	Ala	Val	Asp	Asn	Val
130	225				230				235						240	
133	Gln	Asp	Leu	Leu	Ser	Gly	Ser	Leu	Leu	Arg	Ala	Ile	Met	Ile	Ile	Lys
134					245				250						255	
137	Lys	Ser	Lys	Val	Ser	Leu	Asn	Asp	Asn	Phe	Lys	Ser	Arg	Ala	Val	Val
138					260				265						270	
141	Lys	Pro	Ser	Glu	Leu	Asp	Val	Asn	Met	Asn	His	Glu	Asn	Val	Val	Ala
142					275			280							285	
145	Phe	Ala	Asp	Trp	Ser	Arg	Leu	Gly	Phe	Asp	Glu	Val	Asp	Phe	Gly	Trp
146					290			295							300	
149	Gly	Lys														
150	305															
153	<210>	SEQ	ID	NO:	3											
154	<211>	LENGTH:	920													
155	<212>	TYPE:	DNA													
156	<213>	ORGANISM:	Taxus	cuspidata												
158	<400>	SEQUENCE:	3													
159	atgctgtct	attatcccc	ttttgcttga	aggctgagaa	acacagaaaa	tggggactt									60	
161	gaagtggagt	gcacagggg	gggtgcgc	tttgcgg	ccatggcg	caacgac									120	
163	tcatgtttac	aagatttcaa	tgatgtacat	ccatcat	agcagctgt	tttttatctt									180	
165	ccagaggat	tcaatattga	ggacctccat	cttctactg	ttcaggtaac	tgcgtttaca									240	
167	tgtggggat	ttgttgtgg	cacaaggatc	caccatagtg	tgtctgtatgg	aaaaggaaatc									300	

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/866,570B

DATE: 05/01/2003  
TIME: 13:29:48

Input Set : A:\EP.txt  
Output Set: N:\CRF4\05012003\I866570B.raw

169	ggccagttac	ttaaaggcat	gggagaaaatg	gcaagggggg	agtttaagcc	ctccttagaa	360										
171	ccaaatatgga	ataagagaaaat	ggtaagcct	gaagacatta	tgtacctcca	gtttgatcac	420										
173	tttgatttca	tacacccacc	tcttaatctt	gagaagtcta	ttcaagcattc	tatggtaata	480										
175	agcttggaga	gaataaaatta	tatcaaacga	tgcatgatgg	aagaatgcaa	agaattttt	540										
177	tctgcatttgc	aagttgttagt	agcattgatt	tggcttagcaa	ggacaaagtc	ttttcgaatt	600										
179	ccacccaatg	agtatgtgaa	aattatctt	ccaatcgaca	tgaggaattc	atttgactcc	660										
181	cctcttccaa	aggatacta	tggtaatgt	attgtaatg	catgtgcaat	ggataatgtc	720										
183	aaagacctct	taaatggatc	tcttttat	gctctaattgc	ttataaaagaa	atcaaagttt	780										
185	gctttaaatg	agaatttcaa	atcaagaatc	ttgacaaaac	catctgcatt	agatgcaat	840										
187	atgaagcatg	aaaatgttagt	cggatgtggc	gattggagga	atttgggatt	ttatgaagca	900										
189	gatttcggct	ggggcaaaacc					920										
192	<210>	SEQ ID NO: 4															
193	<211>	LENGTH: 306															
194	<212>	TYPE: PRT															
195	<213>	ORGANISM: Taxus cuspidata															
197	<400>	SEQUENCE: 4															
199	Met	Leu	Val	Tyr	Tyr	Pro	Pro	Phe	Ala	Gly	Arg	Leu	Arg	Asn	Thr	Glu	
200	1					5				10					15		
203	Asn	Gly	Glu	Leu	Glu	Val	Glu	Cys	Thr	Gly	Glu	Gly	Ala	Val	Phe	Val	
204						20				25					30		
207	Glu	Ala	Met	Ala	Asp	Asn	Asp	Leu	Ser	Val	Leu	Gln	Asp	Phe	Asn	Glu	
208						35				40					45		
211	Tyr	Asp	Pro	Ser	Phe	Gln	Gln	Leu	Val	Phe	Tyr	Leu	Pro	Glu	Asp	Val	
212						50				55					60		
215	Asn	Ile	Glu	Asp	Leu	His	Leu	Leu	Thr	Val	Gln	Val	Thr	Arg	Phe	Thr	
216		65				70				75					80		
219	Cys	Gly	Gly	Phe	Val	Val	Gly	Thr	Arg	Phe	His	His	Ser	Val	Ser	Asp	
220						85				90					95		
223	Gly	Lys	Gly	Ile	Gly	Gln	Leu	Leu	Lys	Gly	Met	Gly	Glu	Met	Ala	Arg	
224						100				105					110		
227	Gly	Glu	Phe	Lys	Pro	Ser	Leu	Glu	Pro	Ile	Trp	Asn	Arg	Glu	Met	Val	
228						115				120					125		
231	Lys	Pro	Glu	Asp	Ile	Met	Tyr	Leu	Gln	Phe	Asp	His	Phe	Asp	Phe	Ile	
232						130				135					140		
235	His	Pro	Pro	Leu	Asn	Leu	Glu	Lys	Ser	Ile	Gln	Ala	Ser	Met	Val	Ile	
236		145				150				155					160		
239	Ser	Leu	Glu	Arg	Ile	Asn	Tyr	Ile	Lys	Arg	Cys	Met	Met	Glu	Glu	Cys	
240						165				170					175		
243	Lys	Glu	Phe	Phe	Ser	Ala	Phe	Glu	Val	Val	Val	Ala	Leu	Ile	Trp	Leu	
244						180				185					190		
247	Ala	Arg	Thr	Lys	Ser	Phe	Arg	Ile	Pro	Pro	Asn	Glu	Tyr	Val	Lys	Ile	
248						195				200					205		
251	Ile	Phe	Pro	Ile	Asp	Met	Arg	Asn	Ser	Phe	Asp	Ser	Pro	Leu	Pro	Lys	
252		210				215				220							
255	Gly	Tyr	Tyr	Gly	Asn	Ala	Ile	Gly	Asn	Ala	Cys	Ala	Met	Asp	Asn	Val	
256		225				230				235					240		
259	Lys	Asp	Leu	Leu	Asn	Gly	Ser	Leu	Leu	Tyr	Ala	Leu	Met	Leu	Ile	Lys	
260						245				250					255		
263	Lys	Ser	Lys	Phe	Ala	Leu	Asn	Glu	Asn	Phe	Lys	Ser	Arg	Ile	Leu	Thr	

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/866,570B

DATE: 05/01/2003  
TIME: 13:29:48

Input Set : A:\EP.txt  
Output Set: N:\CRF4\05012003\I866570B.raw

264 260 265 270  
267 Lys Pro Ser Ala Leu Asp Ala Asn Met Lys His Glu Asn Val Val Gly  
268 275 280 285  
271 Cys Gly Asp Trp Arg Asn Leu Gly Phe Tyr Glu Ala Asp Phe Gly Trp  
272 290 295 300  
275 Gly Lys  
276 305

279 <210> SEQ ID NO: 5

280 <211> LENGTH: 903

281 <212> TYPE: DNA

282 <213> ORGANISM: Taxus cuspidata

284 <400> SEQUENCE: 5

285	ttttatccgt	ttgcggggcg	gctcagaaat	aaagaaaaatg	gggaacttga	agtggagtgc	60
287	acagggcagg	gtgttctgtt	tctggaagcc	atggccgaca	gcgaccttc	agtcttaaca	120
289	gatctggatg	actacaagcc	atcgtttcag	cagttgattt	tttctctacc	acaggataaca	180
291	gatatttgggg	atctccatct	cttgatttgg	caggttaactc	gttttacatg	tgggggtttt	240
293	gttggggag	cgaatgtgt	tagtagtgt	tgtgtatgca	aaggatttgg	ccaatttctt	300
295	caaggtatgg	cagagatggc	gagaggagag	gttaagccct	cgattgaacc	gatatggaat	360
297	agagaactgg	tgaagccaga	acattgtatg	cccttccgg	tgagtcatct	tcaaattata	420
299	cacgcaccc	tgatcgagga	gaaatttgg	caaacatctc	ttgttataaa	cttgagata	480
301	ataaaatcata	tcaagacaacg	gatcatggaa	aatgttaaag	aaagtttctc	ttcatttgaa	540
303	attgttagcag	cattggttt	gctagcaag	ataaaaggctt	ttcaaattcc	acatagttag	600
305	aatgtgaagc	ttcttttgc	aatggactta	aggagatcat	ttaatcccc	tcttccacat	660
307	ggatactatg	gcaatgcctt	cggtatttgc	tgtgtatgg	ataatgtcca	tgacccttta	720
309	agtggatctc	ttttgcgcgc	tataatgtatc	ataaaagaaat	caaagttctc	tttacacaaa	780
311	gaactcaact	caaaaaccgt	gatgagcccg	tctgtatgt	atgtcaatac	gaagttcgaa	840
313	gatgtatgtt	caatttgta	ctggaggcag	tcttatatt	atgaagtgg	ctttgggttgg	900
315	ggc						903

318 <210> SEQ ID NO: 6

319 <211> LENGTH: 301

320 <212> TYPE: PRT

321 <213> ORGANISM: Taxus cuspidata

323 <400> SEQUENCE: 6

325	Phe	Tyr	Pro	Phe	Ala	Gly	Arg	Leu	Arg	Asn	Lys	Glu	Asn	Gly	Glu	Leu
326	1			5			10		15							
329	Glu	Val	Glu	Cys	Thr	Gly	Gln	Gly	Val	Leu	Phe	Leu	Glu	Ala	Met	Ala
330				20			25		30							
333	Asp	Ser	Asp	Leu	Ser	Val	Leu	Thr	Asp	Leu	Asp	Asp	Tyr	Lys	Pro	Ser
334				35			40		45							
337	Phe	Gln	Gln	Leu	Ile	Phe	Ser	Leu	Pro	Gln	Asp	Thr	Asp	Ile	Glu	Asp
338				50			55		60							
341	Leu	His	Leu	Leu	Ile	Val	Gln	Val	Thr	Arg	Phe	Thr	Cys	Gly	Gly	Phe
342				65			70		75							80
345	Val	Val	Gly	Ala	Asn	Val	Tyr	Ser	Ser	Val	Cys	Asp	Ala	Lys	Gly	Phe
346				85			90		95							
349	Gly	Gln	Phe	Leu	Gln	Gly	Met	Ala	Glu	Met	Ala	Arg	Gly	Glu	Val	Lys
350				100			105		110							
353	Pro	Ser	Ile	Glu	Pro	Ile	Trp	Asn	Arg	Glu	Leu	Val	Lys	Pro	Glu	His
354				115			120		125							

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/866,570B

DATE: 05/01/2003  
TIME: 13:29:48

Input Set : A:\EP.txt  
Output Set: N:\CRF4\05012003\I866570B.raw

357 Cys Met Pro Phe Arg Met Ser His Leu Gln Ile Ile His Ala Pro Leu  
 358 130 135 140  
 361 Ile Glu Glu Lys Phe Val Gln Thr Ser Leu Val Ile Asn Phe Glu Ile  
 362 145 150 155 160  
 365 Ile Asn His Ile Arg Gln Arg Ile Met Glu Glu Cys Lys Glu Ser Phe  
 366 165 170 175  
 369 Ser Ser Phe Glu Ile Val Ala Ala Leu Val Trp Leu Ala Lys Ile Lys  
 370 180 185 190  
 373 Ala Phe Gln Ile Pro His Ser Glu Asn Val Lys Leu Leu Phe Ala Met  
 374 195 200 205  
 377 Asp Leu Arg Arg Ser Phe Asn Pro Pro Leu Pro His Gly Tyr Tyr Gly  
 378 210 215 220  
 381 Asn Ala Phe Gly Ile Ala Cys Ala Met Asp Asn Val His Asp Leu Leu  
 382 225 230 235 240  
 385 Ser Gly Ser Leu Leu Arg Ala Ile Met Ile Ile Lys Lys Ser Lys Phe  
 386 245 250 255  
 389 Ser Leu His Lys Glu Leu Asn Ser Lys Thr Val Met Ser Pro Ser Val  
 390 260 265 270  
 393 Val Asp Val Asn Thr Lys Phe Glu Asp Val Val Ser Ile Ser Asp Trp  
 394 275 280 285  
 397 Arg Gln Ser Ile Tyr Tyr Glu Val Asp Phe Gly Trp Gly  
 398 290 295 300  
 401 <210> SEQ ID NO: 7  
 402 <211> LENGTH: 908  
 403 <212> TYPE: DNA  
 404 <213> ORGANISM: Taxus cuspidata  
 406 <400> SEQUENCE: 7  
 407 ttctaccgt ttgcagggcg gctcagaaat aaagaaaaatg gggacttga agtggagtgc 60  
 409 acaggcgagg gtgttctgtt tctggaagcc atggctgaca gcgcacgttc agtcttaaca 120  
 411 gatctggaag actacaatcc atcgtttcag cagttgcgtt tttctctacc acaggataca 180  
 413 gatattgagg acctccatct cttgattgtt caggtgactc actttacatg tgggatttt 240  
 415 gttgtggag cgaatgttta tggtagtgc tgcgtacggaa aaggattttgg ccagtttctt 300  
 417 caaggtatgg cggagatggc gagaggagag gtttaagccct cgattgaacc gatatggaat 360  
 419 agagaactgg tgaagccaga agatthaatg gcccctccacg tggatcatct tcgaattata 420  
 421 cacacacccctc taatcgagga gaaatttgc taaacatctc ttgttataaa ctttgagata 480  
 423 ataaaatcata tcagacgatg catcatgaa gaatgtaaag aaagtttctc ttcattcgaa 540  
 425 attgttagcag cattgggttg gctagcaag ataaaagctt ttcaattcc acatagttag 600  
 427 aatgtgaaga ttctcttgc aatggacgtg aggagatcat ttaagcccc tttccaaag 660  
 429 ggataactatg gcaatgccta tggtagtgc tgcgtacgg ataatgtccca ggatcttcta 720  
 431 agtggatctc ttttgcattgc tataatgtatc ataaaagaaat caaagtttctc tttacacaaa 780  
 433 aaaatcaact caaaaactgt gatgagcccg tctccattag acgtcaatat gaagtttggaa 840  
 435 aatgttagttt caattactga ttggaggcat tctaaatatt atgaagtaga cttcgggtgg 900  
 437 ggttaaacc 908  
 440 <210> SEQ ID NO: 8  
 441 <211> LENGTH: 302  
 442 <212> TYPE: PRT  
 443 <213> ORGANISM: Taxus cuspidata  
 445 <400> SEQUENCE: 8  
 447 Phe Tyr Pro Phe Ala Gly Arg Leu Arg Asn Lys Glu Asn Gly Glu Leu

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 05/01/2003  
PATENT APPLICATION: US/09/866,570B TIME: 13:29:49

Input Set : A:\EP.txt  
Output Set: N:\CRF4\05012003\I866570B.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:18; Xaa Pos. 164  
Seq#:34; N Pos. 3,6,9,18  
Seq#:35; N Pos. 9,12,18  
Seq#:36; N Pos. 9,15,18  
Seq#:37; N Pos. 9,12,15,18  
Seq#:38; N Pos. 9,15  
Seq#:48; Xaa Pos. 2,3,4